

What is claimed is:

1. An elongate along an axis bipolar tissue sealer or cutter for application by a surgeon of electrosurgical energy to the tissue and bodily fluids of a patient, the sealer or cutter comprising:

a handle for holding and manipulation by the surgeon;

a chassis carried on the handle extending axially relative to the handle and away from the surgeon, the chassis having a handle end and a distal end disposed along the axis;

a tube carried for axial movement relative to and along the chassis and the handle, the tube elongate relative to the chassis, the tube having a surgeon end and a patient end disposed along the axis thereof;

an effector on the patient end in position to first contact tissue upon movement of the tube relative to the chassis and axially away from the handle by the surgeon, the effector of a material for conducting electrosurgical energy;

a member supported by the distal end of the chassis extending past the patient end of the tube;

a part on the member at the distal end thereof, the part transversely located relative to the axis in position opposite the patient end, the part of a material for conducting electrosurgical energy;

a first bipolar electrosurgical electrode electrically connected to the effector of the patient end;

a second bipolar electrosurgical electrode electrically connected to the part, the second bipolar electrosurgical electrode electrically isolated from the first bipolar electrosurgical electrode;

an electrosurgical generator electrically coupled to the first and second electrosurgical electrodes, the electrosurgical generator for selectively supplying bipolar electrosurgical energy to the first and second bipolar electrosurgical electrodes;

a mechanical activator movably supported on the handle for use by the surgeon, the activator connected to the tube, the activator for axially moving the

patient end and the effector thereof toward or away from the part so that tissue and bodily fluid therebetween may be sealed or cut between the effector and the part through the application of compression and bipolar electrosurgical energy between the first and second electrosurgical electrodes.

5 2. The bipolar tissue sealer or cutter of claim 1 wherein the mechanical activator is connected to the chassis for relative movement of the tube and chassis.

 3. The bipolar tissue sealer or cutter of claim 1 wherein the effector and the part include complimentary sealing or cutting surface for partial mating engagement upon axial movement toward one another along the axis.

10 4. The bipolar tissue sealer or cutter of claim 1 wherein the part and the effector are removably attached to the member and/or the chassis respectively.

 5. The bipolar tissue sealer or cutter of claim 3 wherein the partial mating complimentary surfaces are curvilinear for providing more tissue contacting area than flat surfaces would.

15 6. The bipolar tissue sealer or cutter of claim 3 wherein the partial mating complimentary surfaces are parallel but skewed to the axis to provide elongate contact with axial movement between the member and chassis.

 7. The bipolar tissue sealer or cutter of claim 6 wherein the partial mating complimentary surfaces are substantially flat.

20 8. The bipolar tissue sealer or cutter of claim 6 wherein the partial mating complimentary surfaces are circular.

 9. The bipolar tissue sealer or cutter of claim 3 wherein the partial mating complimentary surfaces are elliptical.

 10. The bipolar tissue sealer or cutter of claim 3 wherein the partial mating complimentary surfaces are triangular for meeting along edges thereof.

25 11. The bipolar tissue sealer or cutter of claim 3 wherein the partial mating complimentary surfaces include at least one conjugating rib and companion slot.

 12. The bipolar tissue sealer or cutter of claim 1 wherein the partial mating complimentary surfaces include one or more ribs.

13. A method of using an elongate along an axis bipolar tissue sealer or cutter for application by a surgeon of electrosurgical energy to the tissue and bodily fluids of a patient, the method of sealing or cutting comprising:

holding and manipulating a handle;

extending axially a tube carried on a chassis supported by the handle;

moving the tube relative to the handle along the axis, the chassis having a handle end and a distal end;

carrying the tube telescopically with the chassis for axial movement relative to and along the axis, the tube elongate relative to the chassis, the tube having a surgeon end and a patient end disposed along the axis thereof;

contacting tissue upon movement axially of an effector on the patient end with movement away from the handle and controlled by the surgeon, the chassis having a member extending from the distal end so a part in position opposite the patient end of the tube and transverse relative to the axis and on the member;

providing a first bipolar electrosurgical electrode coupled to the end effector of the patient end and a second bipolar electrosurgical electrode coupled to the part;

electrically isolating the first bipolar electrosurgical electrode;

coupling electrically to an electrosurgical generator, the first and second bipolar electrosurgical electrodes;

providing relative movement of the patient end and the end effector thereof toward or away from the part so that tissue and bodily fluid therebetween may be sealed or cut between the end effector and the part through the application of compression and bipolar electrosurgical energy between the first and second electrosurgical electrodes during use by the surgeon of a mechanical activator connected for relative movement of the tube or chassis.

14. The method of claim 13 with the step of: mating and engaging the complimentary sealing or cutting surfaces about tissue upon axially moving them toward one another along the axis.

15. The method of claim 13 with the step of removably attaching the part and the effector to the member and the chassis respectively.

16. The method of claim 14 with the step of partially mating the complimentary surfaces which extend along curvilinear paths for providing more tissue contacting area than between flat surfaces.

17. The method of claim 14 with the step of partially mating the complimentary surfaces which extend along planes skewed to the axis to provide elongate contact with relative axial movement between the tube and chassis.

18. The method of claim 14 with the step of partially mating complimentary flat surfaces which extend along the planes of the flat surfaces that are perpendicular to the axis.

19. The method of claim 14 with the step of partially mating complimentary circular surfaces having conjugating arcs.

20. The method of claim 14 with the step of partially mating complimentary elliptical surfaces having conjugating curves.

21. The method of claim 14 with the step of partially mating complimentary triangular surfaces having conjugating edges.

22. The method of claim 14 with the step of partially mating complimentary surfaces by engaging at least one conjugating rib with a companion slot.

23. The method of claim 14 with the step of partially mating complimentary surfaces including one or more ribs and associated slots.

APPARATUS AND METHOD FOR SEALING AND CUTTING

An axial elongate bipolar tissue sealer/cutter and method of use by a surgeon for electrosurgery on tissue has a handle. A chassis on the handle extends axially for axial movement. A tube may move axial relative to the chassis. An effector on a distal end of the chassis first contacts tissue with axial movement. The effector provides bipolar electrosurgery. A member extending from the distal end is opposite the patient end of the tube. A part on the member is transverse to the axis to conduct electrosurgery. First and second bipolar electrodes on the effector and part are electrically isolated. A generator for bipolar electrosurgery supplies the electrodes. An activator is movably supported on the handle connects to the tube and/or chassis to axially move the patient end and its effector relative to the part. Tissue and bodily fluid therebetween are sealed or cut through application of compression and bipolar electrosurgery between the first and second electrodes. The effector and the part have complimentary sealing or cutting surfaces for partial mating engagement upon axial movement toward one another. The effector and the part can be removably attached to the distal end or member, respectively. The partial mating complimentary surfaces may be normal or skewed relative to the axis and may be curvilinear, flat, parallel, circular, elliptical, triangular or have at least one conjugating rib and slot. A method of use has the steps of holding and manipulating the sealer/cutter, moving the chassis relative to the tube, positioning the effector and the port to contact tissue, along the axis coupling bipolar electrodes to the effector and part, electrically isolating the electrodes, selectively coupling the generator to the electrodes for supplying bipolar electrosurgery. Supporting the activator for moving axially relative to one another, the patient part and the effector so tissue therebetween is sealed or cut by applying compression and bipolar electrosurgery across the first and second electrodes are steps.